REMARKS

An Information Disclosure Statement is submitted herewith.

In the Office Action dated February 7, 2006, the Abstract and claims were objected to; claims 1-10 were objected to; claims 1-10 were rejected under 35 U.S.C. § 112, ¶ 2; and claims 1-10 were rejected under 35 U.S.C. § 102 over U.S. Patent No. 5,745,502 (Khayrallah).

The Abstract and claims have been amended to address the objections.

Claims 1, 6, 3, and 8 have been amended to address the § 112 rejections.

However, with respect to the rejection of "the said data frame" at lines 18 and 19 of claim 1, it is noted that antecedent basis does exist since lines 16 and 17 in the claim recite "accompanying one of the data frames." Similar language exists in claim 6. Therefore, withdrawal of this § 112 rejection is respectfully requested.

Khayrallah discloses a method for correcting errors (see preamble of the claims) in packets transmitted from an originating module 110 to a terminating module 120 over a communication link 130. According to the teaching of Khayrallah, the terminating module checks received data for any errors that might have occurred during transmission, by virtue of cyclic redundancy check CRC (col.4, l.7-10). If a received packet is received without error, the terminating module sends an ACK to the originating module (col.4, l.10-12). Otherwise, if the received packet is flawed by channel errors, the ACK is withheld, i.e. no ACK is sent from the terminating module to the originating module (col.4, l.13-14).

In the latter case (ACK withheld), the originating module resends the packet after a predetermined period of time has elapsed (col.4, l.14-16). This is consistent with the automatic repeat request ARQ system (col.4, l.16-17).

As shown in Figure 2 of Khayrallah, on the originating module side, if an ACK is received from the terminating module before the expiration of a timer, it is deduced that terminating module has received the packet correctly (col.4, l.24-27). Otherwise (i.e. ACK not received before timer expires), it is deduced that the terminating module has not correctly received the packet, and this packet can then be retransmitted (col.4, l.29-32).

According to the method of Khayrallah, further processing is performed at the terminating module, so as to store in a buffer flawed packets received, to determine whether an

odd or even number of packet replications is present in the buffer and to adapt its error correction technique to the result of said determination (col.4, 1.52 – col.5, 1.13 and figures 3A-3B).

The present invention as claimed in claim 1 relates to a very different subject matter, that is a method for controlling data retransmission from a control unit over a connection established with a radio terminal, through at least one base station.

As recited in claim 1, first frames are encapsulated, with corresponding timestamping information, in second frames for transmission between the control unit and each base station over an asynchronous interface. The timestamping information accompanying one of the data frames over the asynchronous interface indicates an instant of transmission of the said data frame by each base station with reference to a time counter specific to a radio section of the said connection, and the timestamping information accompanying one of the acknowledgement frames over the asynchronous interface indicates an instant of reception of the said acknowledgement frame by each base station with reference to the said time counter.

Moreover, the method comprises the steps of: (1) storing, at the control unit, the timestamping information indicating an instant of transmission of a data frame; and (2) upon reception at the control unit of an acknowledgement frame accompanied by timestamping information indicating an instant of transmission and containing acknowledgement information interpreted as indicating non-reception of the said data frame by the terminal, selectively taking into account the said acknowledgement information for controlling a retransmission of the said data frame, depending on the result of a comparison between the said instants of reception and transmission.

This provides an efficient criterion independent from the variable delays generated over the asynchronous interface, compared with RTD (round trip delay) for example.

It makes it possible, for example, to retransmit a data frame considered not to have been received by the terminal only if the instant of reception by each base station is later than the instant of transmission by each base station, by an amount exceeding a threshold. Conversely, if the instant of reception by each base station is not later than the instant of transmission by each base station, by an amount exceeding such a threshold, the reception of the acknowledgement frame can be ignored, thus preventing the retransmission of a data frame already received by the terminal.

In Khayrallah, it is not taught that first frames would be encapsulated, with corresponding timestamping information, in second frames for transmission between the control unit and each base station over an asynchronous interface.

The Examiner considers that the header field of data packets contains such timestamping information. It is true that some sequencing information can be included in the header field, such as a sequence number (see col.2, 1.28-32). But such sequence number is only a counter or equivalent, which identifies a packet. It does not indicate either an instant of transmission of a data frame by each base station with reference to a time counter specific to a radio section of the said connection, or an instant of reception of an acknowledgement frame by each base station with reference to the said time counter.

According to what the Examiner wrote in the office action, the sequencing information included in the header field of a packet would indicate an instant of transmission of the data packet, i.e. an instant of transmission by the originating module 110. Similarly, in the reverse direction, the timestamping information would indicate the instant the terminating module 120 has received the data packet. This differs from what claim 1 of the present application recites, i.e. instants of transmission and reception <u>by base stations</u> located between the control unit and the terminal (which would be placed in the communication link 130 in the architecture of Khayrallah) and not by the control unit or the terminal themselves.

The reason for this difference is that, even when assimilating the originating module 110 of Khayrallah to a control unit and assuming that the communication link 130 includes base stations, Khayrallah does not disclose any means to make the originating module know the transmission or reception scheduling of the would-be base stations.

Moreover, Khayrallah does not teach to store, at a control unit, the timestamping information indicating an instant of transmission of a data frame by a base station. Indeed, Khayrallah only discloses to store the entire flawed packets in a buffer at the terminating module 120 (col.4, 1.52-53).

Khayrallah does not teach either to receive at the control unit an acknowledgement frame containing acknowledgement information interpreted as indicating non-reception of a data frame by the terminal (i.e. NACK). Indeed, by contrast with the prior art mentioned in col.1, 1.35-36, the method taught Khayrallah is based on the fact that no acknowledgement information (ACK)

is sent to the originating module in case a packet has not been correctly received by the terminating module (col.4, l.30-32). A fortiori, Khayrallah does not disclose to selectively take into account such negative acknowledgement information for controlling a retransmission of the said data frame.

Anyway, Khayrallah does not teach to compare instants of reception and transmission of a packet by a base station of the communication link 130, but only an instant of reception of a positive acknowledgement (ACK) at the originating module 110 with a timer (see block 240). This is because, as mentioned above, the originating module has no means to know the instants of reception and transmission of a packet by a base station of the communication link 130.

Therefore, the subject matter of claim 1 of the present application is very different from the teaching of Khayrallah. It is thus new and non-obvious over Khayrallah. The same applies to claim 6 for the same reasons. The other claims (including new claims 11 and 12) are acceptable as well, in particular since they depend on claim 1 or claim 6 directly or indirectly.

Allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 20-1504 (MTR.0092US).

Respectfully submitted,

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